

WHAT IS CLAIMED IS:

1. A method to test operating safety of a process control device comprising a control element and an actuator to move the control element, a position controller in a safety circuit, the actuator being coupled to a control unit that is connected to the position controller for exchange of control signals, such that the actuator can be operated by way of the control unit to move the control element and the control element can be moved from an initial condition to a final condition in event of an incident by a control of the actuator by the control unit, a test cycle for the process control device comprising:

- generating a control signal for partial movement of the control element aided by the position controller;
- transferring the control signal from the position controller to the control unit via a signal connection;
- controlling the actuator dependent on the control signal aided by the control unit to operate the actuator for the partial movement of the control element from the initial condition;
- detecting, via a measurement device, measurement signals that indicate the partial movement of the control element from the initial condition; and
- returning the control element to the initial condition.

2. The method according to claim 1, further comprising:

- detecting time-resolved path signals upon detection of the measurement signals with the aid of the measurement device.

3. The method according to claim 2, further comprising:

- determining movement parameters are determined from the detected time-resolved path signals.

4. The method according to claim 1, further comprising:
executing a leakage measurement upon detection of the measurement signals, aided by the measurement device.
5. The method according to claim 1, further comprising:
electronically logging of a course of the test cycle and electronically storing the course in a storage device.
6. The method according to claim 1, further comprising:
activating the test cycle for the process control device utilizing a remote control.
7. The method according to claim 1, further comprising:
partially venting the actuator, which is a pneumatic actuator, to partially move the control element as a reaction to the controlling by the control unit.
8. The method according to claim 1, further comprising:
partially hydraulically operating the actuator, which is a hydraulic actuator, to partially move the control element as a reaction to the controlling by the control unit.
9. A device to test the operating safety of a process control device, comprising:
an control element;
an actuator to move the control element;
a position controller in a safety circuit;

a control unit that is connected with the position controller configured to exchange control signals and is coupled to the actuator, such that the actuator can be operated via the control unit to move the control element in order to move the control element from an initial condition to a final condition in the event of incident with the aid of a controlling of the actuator by the control unit;

a measurement device configured to acquire measurement signals that indicate a movement of the control element from the initial condition;

the position controller comprising a control signal generator configured to generate a control signal for a partial movement of the control element in the course of a test cycle for the process control device, and to transmit the control signal via a signal connection from the position controller to the control unit.

10. The device according to claim 9, wherein the control unit and the position controller are redundantly coupled to the actuator to operate the actuator.
11. The device according to claim 9, wherein the actuator is a pneumatic actuator.
12. The device according to claim 9, wherein the actuator is a hydraulic actuator.
13. The device according to claim 9, wherein the measurement device comprises a motion sensor configured to detect the partial movement of the control element.
14. The device according to claim 9, wherein the measurement device comprises a sound sensor configured to detect the partial movement of the control element.

15. The device according to claim 9, further comprising:
a suppression device to suppress the generation of the control signal for the partial movement of the actuator in the course of the test cycle.
16. The device according to claim 9, further comprising:
a storage device configured to store electronic information concerning the test cycle.
17. The device according to claim 9, further comprising:
an evaluation device configured to automatically evaluate the measurement signals that indicate a movement of the control element from the initial condition.